tion of them, any sum remaining over being given to the British Association; and all his astronomical journals and drawings of Jupiter and Mars to the British Astronomical Association. His trustees are to complete and publish the star maps for tracing meteor paths now in process of completion under the care and charge of Sir William Peck, of The Observatory, Edinburgh.

A summer meeting of the Association of Technical Institutions will be held at Cambridge on Friday and Saturday, July 23–24. The proceedings will commence on the Friday at 10 a.m., when the president, the Marquess of Crewe, will take the chair. Papers will be read on Friday morning by Principal J. C. Maxwell Garnett on a national system of education and by Principal C. Coles on the necessity for close co-operation between technical colleges and the universities. On Saturday morning Principal C. L. Eclair-Heath will read a paper on the relations which should exist between the day continuation schools and the central technical college, and Principal L. Small one on adult education in relation to the work of technical schools. Resolutions dealing with adult education will be submitted at the conclusion of the reading of Principal Small's paper.

We are notified by the Board of Education that the removal of the main offices of the Board from the Victoria and Albert Museum, South Kensington, to King Charles Street, Whitehall, is in progress, and will, it is hoped, be completed by the end of the present month. On and after July 26 the official address of the Board will be Whitehall, S.W.1. It is requested that only urgent communications shall be sent until after July 24, and that these shall be marked "Urgent" on the outside wrapper. The Medical Branch of the Board is at Cleveland House, 19 St. James's Square, S.W.1. The Pensions Branch is at the Science Museum, Imperial Institute Road, South Kensington, S.W.7. The Examinations Section of the Board is housed at 49 Cromwell Road, South Kensington, S.W.7. The office of Special Inquiries and Reports and the Library will remain for the present at the Victoria and Albert Museum. Visitors whose business solely concerns these branches should call at the addresses given above.

The activity of the scientific society of a school may be taken as a measure of the interest aroused in scientific subjects and a sign of progressive teaching. Clifton College occupies a high position, judged by this standard, and its scientific society founded so long ago as 1869, continues to foster the inborn aptitude of many young people for observation and experiment. We have before us a list of exhibits at a conversazione given by the society on July 8, and we do not hesitate to say that the demonstrations, apparatus, specimens, and collections shown would do credit to any scientific society. The demonstrations included wireless telegraphy and telephony, the artificial formation of clouds, the fixation of nitrogen, the fractional distillation of petrol from crude petroleum, and other subjects, and the exhibits illustrated many interesting facts and phenomena of biological and physical science. The conversazione was held to show to parents and friends the work and resources of the scientific society, and we are sure that the company must have been impressed by what was displayed. Clifton College is renowned among the public schools for its attention to science, and the recent conversazione shows that it is able to maintain the high place gained for it by men like Wilson, Shenstone, Worthington, and Rintoul.

Societies and Academies.

London.

Royal Society, June 24.—Sir J. J. Thomson, president, in the chair.—Sir Ray **Lankester**: Some rostro-carinate flint implements and allied forms. A series of rostro-carinate flint implements is described and figured in this paper from various localities, including one from the Lower Palæolithic gravel of the valley of the Oise (France). It is shown that the form exhibited by the "Norwich test specimen," with ventral plane, dorsal plane or platform, anterior rostrum, with dorsal carina or keel, is modified in some of the specimens here figured by the "flaking away" of the ventral plane and by the hook-like curvature of the rostrum. A large Sub-Crag example is described, in which only one of the characteristic features of the type, namely, the great ventral plane, is retained, the implement serving as a very efficient "jack-plane." The evidence of the manufacture of these implements by a series of humanly directed blows is indicated by the illustrative drawings.—Lord **Rayleigh**: A re-examination of the light scattered by gases in respect of polarisation. I.: Experiments on the common gases. Re-determinations are given of the relative intensity of the two polarisations in the light scattered at right angles by pure gases. The paper is chiefly concerned with developing accurate experimental methods. The values obtained are as follows:

Gas	H_2	N_2	Air	O_2	CO_2	N_2O
Intensity of weak component polarisation ... (Strong component = 100.)	4·51	4·74	5·68	10·1	12·4	16·1

—A. **Mallock**: Note on the influence of temperature on the rigidity of metals. The experiments here described were carried out at the Davy Faraday Laboratory as a continuation of a somewhat similar set on the temperature-variations of Young's modulus (see Proc. R.S., A, vol. xcv.). The method adopted in the present series depended on the determination of the periods of a torsion balance the restitutive couple of which was given by the rigidity of a specimen of the metal tested at various temperatures. The coefficients of temperature-variation found for rigidity agreed with those for Young's modulus in so far that in both cases the variation diminished as the melting point of the metal increased. The chief value, however, of the present experiments was in showing that the natural plasticity or internal friction of metals (which leads to what has sometimes been called hysteresis) was even more affected by temperature than were the coefficients of elasticity, and that the value of "rigidity" obtained from the observed periods was very appreciably affected by the variation of plasticity. For this reason the numerical results are not given in the paper, but the method of experiment is described and the nature of the errors introduced by the change of plasticity stated.—E. F. **Armstrong** and T. P. **Hilditch**: A study of catalytic actions at solid surfaces. V.: The rate of change conditioned by a nickel catalyst and its bearing on the law of mass-action. The hydrogenation of selected simple organic compounds containing one ethylenic linkage has been studied with reference to the indications of a linear relation between the amount of hydrogenation and time which were observed in the case of mixtures of unsaturated glycerides (part i. of this series). It is now found that this relation, in the case of methyl and ethyl cinnamates, safrol, or anethol (when hydrogenated in the liquid state in presence of nickel at 140° or 180° C.), takes a linear form for at least 60 per cent., and in most cases 80 to 90 per cent., of the whole action. The interpretation of the mechanism of the action which the authors deduced from the work on unsaturated glycerides thus receives experimental confirmation.—H. **Jeffreys**: Tidal friction in shallow seas. In a recent paper G. I. Taylor has shown that the friction of the tidal currents in the Irish Sea over the bottom causes enough dissipation of energy to account for about one-fiftieth of the known empirical secular acceleration of the moon. This suggests that other and larger shallow areas within strong tidal currents will contribute a still greater amount to the dissipation of energy, and in the present paper the chief shallow seas of the earth are treated separately. The greatest dissipation is found to take place in the Bering Sea, the Yellow Sea, and the Strait of Malacca. Altogether, enough is found to account for about 80 per cent. of the secular acceleration, leaving a balance to be explained by currents in fjords and along the open coast.—Prof. J. C. **McLennan**, J. F. T. **Young**, and H. J. C. **Ireton**: Arc spectra *in vacuo* and spark spectra in helium of various elements. (1) The vacuum arc spectra of antimony, bismuth, calcium, magnesium, silver, and copper, and the spark spectra in helium of antimony, bismuth, aluminium, cadmium, lead, magnesium, thallium, and tin, have been investigated in the region below $\lambda = 1850$ Å.U. (2) The measurements of the arc spectra of antimony, bismuth, calcium, and selenium, and the spark spectra of antimony and lead, appear to be the first recorded for these elements in this region. (3) The work with the vacuum grating spectrograph has resulted in the extension of the vacuum arc spectrum of copper to about $\lambda = 1216$ Å.U.—Prof. J. C. **McLennan** and A. C. **Lewis**: Spark spectra of various elements in helium in the extreme ultra-violet. In this investigation the spark spectra in helium of the elements silicon, tellurium, molybdenum, and zirconium have been determined for the spectral region between $\lambda = 1900$ Å.U. and $\lambda = 1600$ Å.U.—K. H. **Kingdon**: Low-voltage ionisation phenomena in mercury vapour. (1) By the use of a magnetic field experimental proof has been given that when mercury-vapour atoms are bombarded with electrons possessing volt-velocities greater than 4·9, the atoms may be ionised by these collisions. (2) An attempt has been made to explain the experimental results of Davis and Goucher on the basis of the results obtained. (3) Arguments are presented for showing that the production of ions in mercury vapour at this voltage is not so definitely at variance with the Bohr theory as might at first be thought. (4) The experiments go to show that the low-voltage ionisation is not due to ionisation by successive impacts, but that perhaps, in order that a 4·9-volt collision should produce ionisation, the velocity of the impinging electron must bear some definite orientation with regard to the orbit of the electron which is to be ejected from the atom.—Sir George **Greenhill**: Electrification of an insulated lens and allied problems treated by the stream function.—C. **Chree**: Simultaneous values of magnetic declination at different British stations. A comparison is made of corresponding diurnal variations of magnetic declination at Eskdalemuir and Kew observatories. Mean monthly, daily, and hourly values of declination at Eskdalemuir, Stonyhurst, Falmouth, and Kew are compared. The results are also given of the measurements of a large number of irregular declination changes at the several stations. It is found that the differences between different stations increase with the amount of magnetic disturbance, and that if accurate information is desired as to magnetic declination anywhere in the field, observations taken on disturbed days should not be relied on. It is thus important that observatory records should be consulted before the results of field observations are accepted: A number of results are obtained as to the relative amplitudes of irregular declination changes at the several observatories.—J. **Mercer**: Symmetrisable functions and their expansion in terms of biorthogonal functions. The purpose of this communication is to announce certain results relative to the expansion of a symmetrisable function $\kappa(s, t)$ in terms of a complete system of fundamental functions corresponding to $\kappa(s, t)$, regarded as the kernel of a linear integral equation. An expansion of the function of positive type by which $\kappa(s, t)$ is symmetrisable is obtained and applied in two important cases.—W. F. **Sheppard**: Reduction of error by linear compounding. The paper deals with the general problem of improving an observed quantity which contains an unknown error by adding to it a linear compound (linear function) of other observed quantities, called auxiliaries, the coefficients in the added portion being chosen so as to make the mean square of error of the whole a minimum. This is a generalisation of the special problem of finding the improved value when the auxiliaries are the differences of sufficiently high order of a set of quantities. The treatment of the problem is simplified by a brief statement of general theorems, and by a theory of conjugate sets of quantities. The object is to arrive at formulæ suitable for numerical calculation.—G. B. **Jeffery**: Plane stress and plane strain in bipolar co-ordinates. The solution is given for a flat, elastic plate bounded by two circles when under stresses applied over its boundaries. Curvilinear co-ordinates are employed, for which the co-ordinate curves form a double set of orthogonal coaxial circles. Important particular cases are: (1) A circular plate with an eccentric circular hole; (2) a semi-infinite plate bounded by a straight edge with a circular hole; and (3) an infinite plate containing two circular holes. The differential equation of the stress function is solved for these co-ordinates, the stress function is obtained for given arbitrary stresses applied over the boundaries, and expressions are deduced for the stresses and displacements produced at any point of the plate.—R. O **Street**: The tidal motion in the Irish Sea: Its currents and its energy. Certain general relations are obtained from the Laplacian dynamical theory connecting the form of the tidal wave and the magnitude of the surface current on a sea of limited extent rotating with the earth. In continuation of a former paper, these are applied to the recorded data for the Irish Sea, and the agreement is found to be fairly satisfactory. A second approximation to the hydrodynamical problem for a rotating tidal basin is then effected, and by means of the relations thus obtained the mean rates of transfer of water and of energy across certain vertical sections placed transverse to the direction of the flood-stream in the Irish Sea are computed from the existing hydrographical data. The results show that there is a residual flow of water northwards through this region of such magnitude that the Irish Sea would empty itself through the North Channel about three times a year, while the tidal flow of energy from all causes which takes place into this area is at the mean rate of about 6×10^{17} ergs per second. The result of this estimate of the flow of energy into the area is in general agreement with an independent one made recently by Mr. G. I. Taylor (Phil. Trans., A, vol. ccxx., 1919, pp. 1–33). If we could assume that this energy is all dissipated, the result would be about 250 times the viscous dissipation calculated directly by the writer in a previous paper (Roy. Soc. Proc., A, vol. xciii., 1917, pp. 348–59), on the assumption of smooth laminar tidal motion throughout the region.—W. G. **Palmer**: The catalytic activity of copper. Part i. Simple apparatus is described for the measurements by chronograph records of the reaction velocities at different temperatures of a typical catalytic action—that of the dehydrogenation of alcohol by copper. Details are given of the methods used in preparing a reproducible contact material. After oxidation and reduction a second time the copper showed an activity of unchanged value. It is shown that copper prepared electrolytically is quite inactive as a catalyst, in spite of great variation in the conditions of its deposition. Copper reduced from its oxide was active at temperatures above 200° C., but this activity depended on the temperature at which the metal was reduced from its oxide.—S. **Barratt**: The origin of the "cyanogen" bands. (1) Observations have been made of the spectra of the flames of a number of gases containing carbon, hydrogen, nitrogen, and oxygen. (2) The cyanogen bands are strongly developed in the coal-gas-nitrous oxide flame. (3) Evidence has been obtained that they are entirely absent from the hydrogen-nitrous oxide flame if all traces of carbon are excluded, and it appears to follow that the presence of carbon is essential to their production. (4) The appearance of the cyanogen bands is, under appropriate conditions, a more delicate test for carbon than that of any of the other bands associated with that element. On the other hand, this spectrum is not necessarily developed when both carbon and nitrogen are present. (5) The conclusion of Grotrian and Runge that the cyanogen spectrum is to be attributed to nitrogen is shown to rest on assumptions which are not confirmed in the present investigation. (6) The cyanogen spectrum provides a very delicate test for the presence of compounds of nitrogen when admitted in the form of a gas to hydrocarbon flames burning in air, since elementary nitrogen does not appear in ordinary circumstances to be effective in producing the cyanogen bands in such flames. (7) The intensity of the cyanogen bands when carbon compounds are admitted to the hydrogen-nitrous oxide flame bears no simple relation to the amount of carbon thus added.—F. **Horton** and Ann C. **Davies**. The effects of electron collisions with atmospheric neon. The critical velocities for electrons in neon were investigated by methods similar to those employed with helium and argon. It was found that neon differed from these gases in showing more than one critical velocity both for radiation and for ionisation, these critical velocities being detected under conditions such as to preclude the possibility of any of them being due to the displacement or removal of a second electron from the atom.—A. G. **Bennett**: The occurrence of diatoms on the skin of whales. With an appendix by E. W. Nelson. The author states that the skin of certain fin whales and blue whales captured in sub-Antarctic waters is discoloured by a superficial film of a buff colour, resembling in tint the coloured bands often observed on floating ice. Whales thus affected are nearly always fat. Microscopic examination showed that this film consists of immense numbers of diatoms. The fat individuals are probably those which have spent some time in the far South, where the supply of whale-food is very abundant during the summer. There is reason to believe that the thin individuals are recent arrivals from warmer water. The skin of these thin specimens appears to be free from any noticeable film of diatoms; their light parts are thus white instead of having the yellow tinge which has given rise to the name "sulphur-bottom" applied by the whalers to whales in which the light parts are yellowish. The cutaneous film of Antarctic "sulphur-bottoms" may be composed of the same diatoms as those which form the coloured bands on ice.—R. W. **Wood**: An extension of the Balmer series of hydrogen and spectroscopic phenomena of very long vacuum tubes.—F. W. **Aston** and T. **Kikuchi**: Moving striations in neon and helium. When an induction-coil spark is passed through a spectrum tube containing neon, and the discharge observed with a rotating mirror, it is seen to consist of bright striations moving from the anode towards the cathode. When first observed the velocity was found to be roughly that of sound in the gas. Further investigations now show that this is only a limiting case of a very complex phenomenon. The velocity is found to decrease with increase of pressure, and also to depend on the bore of the tube. The effect of change of temperature has been investigated, and curves are given showing that at constant volume the effect is much greater than the expansion coefficient. At constant pressure the temperature effect comes in only at high temperatures, when it is probably due to impurities liberated from the tube. Helium is found to give much the same sort of results as neon. Experiments with mercury vapour and other gases are also described. No satisfactory theoretical conclusions have yet been arrived at, and further experiments are in progress.

Geological Society, June 23.—Mr. R. D. Oldham, president, in the chair.—O. **Holtedahl**: The Scandinavian mountain problem. A brief account is given of the history of research regarding the Scandinavian mountain problem, which deals with the superposition of highly metamorphosed, often gneissose, rocks upon slightly altered fossiliferous Cambro-Silurian sediments. From a consideration of the phenomena in the mountain-belt of deformation it is inferred that the age of the displaced materials depends upon the angle of inclination of the thrust-planes and their depth. Though the thrusts have extended downwards for a considerable distance, they have not generally, in the author's opinion, reached below the level of the pre-Cambrian plane of denudation, and no true Archæan rocks could, as a rule, have been tapped. In support of these conclusions some of the tectonic features of two districts are indicated: (1) Finmarken, in Northern Norway, and (2) the southern part of the Sparagmite area near Randsfjord, in South-Central Scandinavia. Brief descriptions are given of the rock-groups in Finmarken and their structural relations. Special attention is directed to the structure of the Alten district, where the main tectonic feature is a highly undulating thrust which does not intersect the pre-Cambrian floor. Regarding the Randsfjord district, the original order of succession of the strata is indicated from the Holmia shale to the close of the overlying Cambro-Silurian sediments. Pressure from the north in Late Silurian time developed imbricate structure in these sediments, but such displacements are not supposed to have affected the pre-Cambrian floor. As investigation proceeds it seems to become increasingly evident (1) that the highly metamorphic sedimentary rocks of the middle and northern parts of the eastern mountain-belt are mainly of earlier Ordovician age, while those west of the Sparagmite region in the south-western mountain district are chiefly of Silurian age, and (2) that the igneous materials associated with these highly metamorphosed sediments are younger intrusive rocks.

Aristotelian Society, July 5.—Prof. Wildon Carr in the chair.—Dr. W. F. **Geikie-Cobb**: Mysticism, true and false. The application of the term "mystic" to current psychic phenomena was unwarranted. True mysticism was an immediate apprehension of the one as the good rather than the true; it possessed a positive, personal, unquestioning quality which is a necessary feature of all moral valuation, and belonged to the world of the "excessive," and therefore was, *per se*, beyond logic. All attempts to communicate the mystic experience were limited to the use of symbols, and, therefore, by their very nature doomed to partial failure. Those symbols, however, were not selected arbitrarily by the conscious mind, but drawn from the storehouse of the unconscious. Mysticism differs from "extroversion" in that its supreme interest is in the one who is at once another and the ground of the mystic's being. The truth of mysticism is implied in the truth of the self as transcendental, a truth without which the empirical self loses most of its value. But mysticism is not adequately defined as a form of feeling, and what has led to its being so defined is the fact that not thought, but love, is the distinguishing function of all true mystic experience. If an air of unreality surrounds the utterances of mystics, it is only for those who are strangers to love. He who loves eternal beauty holds its transitory appearances as of lesser worth. Dante, for example, at the height of his vision saw love enthroned, and declared that it was love which moved the sun and the other stars. Before this supreme experience of love it would seem that all discursive thought was foredoomed to silence as a worshipper in the outer court of reality.

DUBLIN.

Royal Dublin Society, June 22.—Dr. F. E. Hackett in the chair.—Prof. W. **Brown** and P. **O'Callaghan**: The change in the rigidity of nickel wire with magnetic fields. Transverse magnetic fields, both direct and alternating, have the reverse effect on the rigidity of nickel that direct or alternating longitudinal magnetic fields have; that is, for the former there is an increase, and for the latter a decrease.—Prof. G. H. **Carpenter**: Injurious insects observed in Ireland during the years 1916–17–18. The paper contains records of injury to apple fruitlets by capsid bugs, as recently noticed in England, and also by beech weevils (*Orchestes fagi*), as observed by Theobald in Devonshire in 1912. There are also accounts of the feeding of *Ptinus tectus* in stores of casein and in carpets.—A. G. G. **Leonard** and Agnes **Browne**: Some derivatives of nitrotoluidine (4-nitro-2-amido-1-methylbenzene). The following compounds obtained by the diazotisation of nitrotoluidine [$NH_2 : Me : NO_2 = 1 : 2 : 5$] and suitable coupling have been described: Nitromethylphenylazo-*β*-naphthol, bright red needles, m. p. 204° C.; nitromethylbenzenediazoamino-*o*-toluene, yellow needles, m. p. 133° C.; nitromethylbenzenediazoamino-*p*-toluene, yellow hexagonal plates, m. p. 131° C.; nitromethylaminobenzene-*p*-sulphonic acid, yellow amorphous substance, m. p. 129° C.; methylnitrodiazoamino-*p*-nitrobenzene, yellow amorphous powder, m. p. 118° C.; and 2-methyl-5-nitro-2′ : 4′-dihydroxyazobenzene, yellow amorphous powder, m. p. 234° C.—The late Prof. **McClelland** and the Rev. H. V. **Gill**: An investigation into the causes of the self-ignition of ether-air mixtures. When a mixture of ether and air is allowed to expand suddenly into an evacuated tube 3 ft. long and of about 3 in. diameter, it is found to ignite. This ignition is often followed by an explosion which may shatter the tube. The authors describe experiments made to determine the temperatures at different parts of the tube when pure air is used instead of the mixture. A thermo-couple was employed. The increase of temperature following on the inrush of air was found to be a maximum near the closed end of the tube, and to decrease in positions further from the end. The length of the tube has an important effect on the rise of temperature. In the case of a tube 3 ft. long the temperature reached was 193° C. From results arrived at by other methods it appears that this temperature is sufficient to cause the ignition of ether-air mixtures. Theoretical considerations were dwelt on. It is proposed to investigate further certain points of interest connected with this effect.

PARIS.

Academy of Sciences, June 28.—M. Henri Deslandres in the chair.—L. **De Launay**: The course of the Coal Measures in the Central Massif and at its edges. An attempt to deduce some general considerations upon which experimental borings can be placed in the Paris basin.—L. **Maquenne** and E. **Demoussy**: A case favourable to the action of copper on vegetation. A study of the influence of traces of copper salts on the water-culture of lettuce, peas, and wheat.—Em. **Bourquelot** and H. **Hérissey**: The presence in the melilot and woodruff of glucosides furnishing coumarin under the hydrolysing action of emulsin. The fresh plants (*Melilotus officinalis*), extracted with boiling water, gave a solution containing traces only of free coumarin, but the same liquid after treatment with dilute sulphuric acid gave crystals of coumarin on distillation, proving that the coumarin was combined, probably as a glucoside. The plant was shown to contain an enzyme also capable of hydrolysing the glucoside. Similar results were obtained with *Asperula odorata*.—A. **Righi**: Relativity and a scheme for a decisive experiment.—Ch. Ed. **Guillaume**: Values of the expansions of standard nickel-steels. In the preparation of nickel-steels certain amounts of manganese and carbon are necessarily present. For the standard of reference a nickel-steel containing 0·4 per cent. manganese and 0·1 per cent. carbon has been chosen, and the effects of varying amounts of these elements upon the expansion have been based on this as a type. The results are condensed in two curves representing the values of the two coefficients, α_{20} and β_{20}, of the equation of expansion.—G. J. **Rémoundos**: The modulus and zeroes of analytical functions.—J. **Chazy**: The course of the movement in the problem of three bodies when the time increases indefinitely.—E. **Belot**: The origin of solar and stellar heat.—A. **Véronnet**: The temperature of formation of a star in an indefinite homogeneous nebula.—M. **Gouineau**: Verification of the thermo-electricity of liquid mercury. C. Benedicks has recently proved experimentally the existence of a new thermo-electric effect produced in a homogeneous metallic circuit by an asymmetrical distribution of temperatures. The results verify and complete those of M. Benedicks.—A. **Sellerio**: The analysis of three galvanomagnetic effects. Confirmation of a new effect.—M. **Audant**: Contribution to the study of the critical state of ethyl ether. Studies on the variations of the critical temperatures with the tube-filling and on the critical opalescence.—M. **Pauthenier**: The ratio of the absolute retardations in the Kerr phenomenon for different wave-lengths in the case of nitrobenzene. Application of the method of instantaneous charges to carbon bisulphide. The ratio of the absolute retardations in both carbon bisulphide and nitrobenzene is −2 if the times of charge are sufficiently short.—E. **Damour**: The application value (*valeur d'usage*) of combustibles. This value is inversely proportional to the weights of two combustibles required to produce the same thermal effect in a given furnace. Since the efficiency depends on the nature of the fuel, the application value is not measured by the calorific value alone. The temperature of combustion is an important factor in determining the price of a fuel.—R. **Dubrisay**: The application of a new method of physico-chemical analysis to the study of double salts. The method is based on the measurement of miscibility temperatures with phenol. The miscibility temperatures of certain pairs of salts follow very nearly an additive rule; other salts show marked deviations, and for these the existence of double salts in solution appears probable.—MM. **Lespieau** and **Bourguel**: The production of true acetylene hydrocarbons starting from epidibromhydrin. Compounds of the type $CH_2{:}CBr{\cdot}CH_2R$ are readily obtained by the interaction of α-epidibromhydrin and a magnesium alkyl derivative, and from these by three simple reactions good yields of substituted acetylenes, $HC{:}C{\cdot}CH_2R$, are produced. Full details of the preparation of normal pentine (n-propylacetylene) by this method are given.—E. **Chaput**: Remarks on the *rôle* of dislocations in the tectonic of the Côte d'Or.—P. **Bonnet**: The movements of the seas at the limit of the Permian and the Trias in the geosynclinals of Eurasia.—G. M. **Stanoievitch**: The aeroplane and hail. Suggestions for the prevention of hailstorms by aeroplanes.—M. **Nobécourt**: The anatomical structure of the tubercles of the Ophrydeæ.—G. **Mangenot**: The evolution of the chromatophores and the chondriome in the Florideæ.—P. **Guérin** and Ch. **Lormand**: The plasmolytic action of a certain number of vapours.—MM. **Lapicque** and **Brocq-Rousseu**: Marine algæ as food for the horse. An account of an experiment on two horses in full work. The oats in the ration were gradually replaced by seaweed (*Laminaria flexicaulis*), and the horses worked normally for twenty days on food from which oats were absent. Then the horses were put to extra heavy work for three days, still on hay and seaweed, and their condition was as good as that of horses doing the same work on the usual food, hay, straw, and oats.—M. **Gautiez**: The influence of the attitude of the body on respiration.—A. **d'Arsonval**: Remarks on the preceding communication.—J. **Amar**: Attitudes of the body and respiration. Walking on the front of the foot, head thrown back, allows large and deep respirations. Walking on the heels has a contrary effect, generally harmful to the health.—R. **Wurmser**: The action of chlorophyll on radiations of different wave-lengths.—A. L. **Herrera**: The imitation of cells, tissues, cell-division, and the structure of protoplasm with calcium fluosilicate. Confirmation of the researches of MM. Gautier and Clausmann on the biological importance of fluorine. Calcium fluosilicate produced by the double decomposition of an alkaline silicate and potassium bifluoride in the presence of calcium chloride and water, if the diffusion of the solutions is very slow, gives remarkable imitations of the structure of protoplasm, natural cells, and their division. These imitations can be studied, stained, and preserved by the usual histological processes.—C. **Perez**: A new type of Epicarid, *Rhopalione uromyzon*, sub-abdominal parasite of *Ostracotheres spondyli*.—J. **Dragoiu** and M. **Fauré-Fremiet**: Development of the aerial canals and the histogenesis of the pulmonary epithelium in the sheep.—W. R. **Thompson**: *Cyrillia angustifrons*, parasite of a terrestrial Isopod, *Metaponorthus pruinosus*.—P. **Thomas** and A. **Chabas**: The estimation of tyrosin and the dibasic amino-acids in the proteids of yeast.—A. Mayer, H. **Magne**, and L. **Plantefol**: The toxic action of dichloroethyl sulphide.—A. **Besredka**: An attempt at the purification of therapeutic sera.—F. **Ladreyt**: Histological polymorphism of certain epithelial neoplasms and the relations between these inflammatory neoformations to cancerous tumours.

SYDNEY.

Linnean Society of New South Wales, April 28.—Mr. J. J. Fletcher, president, in the chair.—G. H. **Hardy**: Synonyms, notes, and descriptions of Australian flies of the family Asilidæ. As a result of work done since the revision of Australian species of this family by Miss Ricardo in 1912–13, it has become possible to establish the identity of many of the species which were not identified at the time. The present paper deals almost entirely with the genus Neiotamus. Of the forty-seven species usually placed in sub-genera of this genus, twenty are dealt with and placed under twelve species; two additional species are described as new.—F. **Muir**: A new genus of Australian Delphacidæ (Homoptera). Most, if not all, of the described Australian Delphacidæ are from eastern States. Of the fourteen genera recorded as Australian the author considers only one as entogenic. The genus described as new in this paper is from King George's Sound, South-West Australia, and is regarded as entogenic.—Dr. C. P. **Alexander**: An undescribed species of Clytocosmus, Skuse (Tipulidæ, Diptera). The genus Clytocosmus was proposed by Skuse in 1890, and has remained monotypic until now, the type species being *C. Helmsi* from Kosciusko. A second species is here described as new from Ulong, on the Dorrigo tableland.

Books Received.

A Text-Book of Organic Chemistry. By E. de B. Barnett. Pp. xii+380. (London: J. and A. Churchill.) 15*s*. net.

Johnston's New Era School Atlas. Pp. 40. (Edinburgh: W. and A. K. Johnston, Ltd.; London: Macmillan and Co., Ltd.) 1*s*. net.

Orographical, Regional, Economic Atlas. Part i.: British Isles. Pp. 32. (Edinburgh: W. and A. K. Johnston, Ltd.; London: Macmillan and Co., Ltd.) 1*s*. 6*d*. net.

Notes on Dynamics: With Examples and Experimental Work. By T. Thomas. Pp. 123. (London: Crosby Lockwood and Son.) 6*s*. net.

The Nomenclature of Petrology. By Dr. A. Holmes. Pp. v+284. (London: T. Murby and Co.) 12*s*. 6*d*. net.

The Botany of Iceland. Edited by Dr. L. K. Rosenvinge and Dr. E. Warming. Vol. ii., part 1. Pp. 248+5 plates. (Copenhagen: J. Frimodt; London: J. Wheldon and Co.)

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